A HUEBCORE PUBLICATION

PurchasingWorld®

MANAGING THE BUSINESS OF BUYING

SEPTEMBER 1990

TEAM BUYING

Purchasing, design and manufacturing break communication wall

Team buyers at Warr[illegible] updated: Jim Stack, Cliff Hung[illegible] Bill Crites

- Negotiate for value
- "Gut feel" fades
- Nonferrous pricing

Transportation report

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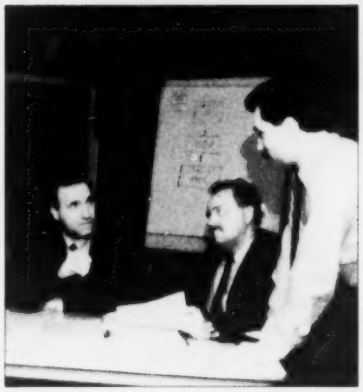

Warren Consolidated's employees can all contribute to the buying of their continuous caster. Page 34

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PurchasingWorld

Lighting that's light on your wallet

GE Lighting suggests these tips saving electricity in lighting your home and business:

- The higher the wattage, the more energy the bulb uses. The higher the lumens, the brighter the light. Your best bet is the bulb that gives you the most lumens for the fewest watts.
- Use three-way bulbs in all of your three-way lamps, and switch them to lower settings to save energy when bright light isn't needed.
- Halogen floodlights offer up to 40% energy savings over standard floodlights while giving the same amount of light.
- High-pressure sodium, mercury-vapor, or quartz lights are up 70% more energy-efficient than standard incandescent bulbs in outdoor security applications.

General Electric Company, Nela Park, Cleveland, OH 44112

Purchasing policies at your fingertips

Understand, analyze and reform public purchasing policies with "The Model Procurement Code." Now in its 4th printing, the book covers the essential features of an effective system, including specifications, contractor selection and administration, cooperative purchasing and supply management. It also proposes ways to resolve disputes as well as ethical standards for government employees and vendors. Cost is $49.95. *The American Bar Association, 750 N. Lake Shore Dr., Chicago, IL 60611* **Circle 20**

Plastic packaging innovators to be honored

Innovations in plastics food packaging and processing technology, will be recognized in the fifth annual Du Pont Awards Competition. This is the first year, however, the company is encouraging entries world-wide as they help respond to the challenge for providing fresh, tasty, convenient and safe food. Entries that have been test-marketed or commercialized between June 15, 1989 and November 15, 1990 are eligible for the 1990 competition. *Du Pont Company, Wilmington DE 19898* **Circle 13**

Earn certification in resource management

The American Production and Inventory Control Society (APICS) has announced the development of a new professional education and testing certification program. Certified in integrated resource management (CIRM) is designed to educate the managerial "generalists" of the future. The testing areas include markets, logistics, manufacturing processes, integrated services and a final exam. *APICS, 500 West Annandale Rd., Falls Church, VA 22046-4274* **Circle 44**

Make employees into athletes

On- and off-the-job injuries cost employers billions of dollars annually due to lost work time, group medical and worker's compensation claims. A program called Athletes in Industry™ addresses these rising costs through the implementation of cost-effective injury prevention and safety programs. The programs use a physician-approved flexibility stretching program. It teaches basic stretching exercises that contribute toward reducing on-the-job injuries when they most often occur—during the first few hours of the workshift and during overtime. *Athletes in Industry, 321 N. Rampart St., Suite 225, Orange, CA 92668*

Circle 50

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PW PREDICTS

Buyers beware:

Recession unlikely, but triggers still exist

The consensus is still predicting slow growth—rightly so in my judgement. Fueling this continued optimism is the recent move by the Federal Reserve, on July 13, to reduce the federal funds rate. In so doing, the Fed sent a clear signal that it has eased monetary policy.

This easing of credit provides the economy with a much-needed boost. Unfortunately, changes in monetary policy impact the economy's output level with a lag. It is reassuring to know, however, that after all the zero inflation rhetoric, our monetary policymakers are not going to actively let the economy drift into recession as a consequence of their war on inflation.

But is the Fed's rate-cutting move in time? Is it sufficient in magnitude? While it remains unlikely the economy will stagnate itself into an economic downturn, a number of recessionary triggers could still incite a correction.

Keep your eye on consumers, the economies of our major trading partners and the Fed. These three groups represent the traditional triggers of recession in the United States. One other factor requires monitoring: fiscal policy, which could once be taken for granted, is now presenting additional risk.

Consumers are challenging the assumption that their spending will keep the economy moving forward. The dramatic slowdown in employment growth and real wage income has led to visible weakness in retail sales and consumer expenditures. In fact, spending is at its weakest level since 1982, the year our current expansion began.

The Fed's latest move should put an end to declining confidence by consumers. Without a stimulant, such as rapidly rising rates of inflation, unemployment or interest, further retrenching by consumers is not likely.

The second type of recession scenario, one triggered by factors outside the United States, has historically been associated with oil. Risk associated with an oil shock of the appropriate magnitude has now increased, given Iraq's recent invasion. German unification, along with political and economic reform in the Soviet Union, also generate ample concern. The volatile Tokyo stock market and excessive valuation of Japanese real estate don't add stability to the global arena either.

These events are especially troublesome now, given the current period of slow growth which has made the U.S. very vulnerable to external shocks.

Federal Reserve activity is the third recessionary trigger of concern. The leading cause of economic downturns in the post World War II era has been excessively restrictive monetary policy, either actively engineered or passively permitted by the Fed.

The Fed's recent ease is appropriate, both in direction and magnitude. Though a fullblown credit crunch wasn't visible, one was building. The probability that the Fed's recent move will lead the economy out of its soft-landing, slow-growth position and into a period of inflation-stimulating expansion, is small. Gross national product (GNP) will most likely continue to grow at a pace below the long-run trend of 2.5%. Therefore, the excessive demand that is necessary for true inflation to be triggered is not present. If the construction biases in the inflation indexes start to display rising price pressures, don't panic. Any inflation spurt will be temporary, unless GNP surges to above 2.5% at an annual rate.

Possibly the greatest risk to the nearly eight-year-old expansion comes from the fiscal side. The Federal budget deficit is again on the rise, and it may come in as much as $50 billion above the Gramm-Rudman-Hollings fiscal year 1990 target. With the size of the peace dividend shrinking as a countering force, President Bush's lips said the T-word on June 26. If thoughts of tax hikes turn into reality, they couldn't come at a worse time.

Recessionary triggers are always and everywhere a threat to economic activity. The Fed's recent easing of credit, aimed at providing the economy with a small but firm push toward continued growth, has also tempered the negative expectations associated with potential tax hikes. Unfortunately, with escalating turmoil in the Middle East, monetary and fiscal issues are no longer the primary determinants of domestic economic health.

By John Sheridan

Air cargo adapting

Overview: Domestic air express has provided air cargo carriers with an outstanding vehicle for growth during the current expansion. Since 1982, express volume has expanded nearly 20% annually. Whether future performance by air cargo carriers is as outstanding depends primarily on their ability to adjust to technological change.

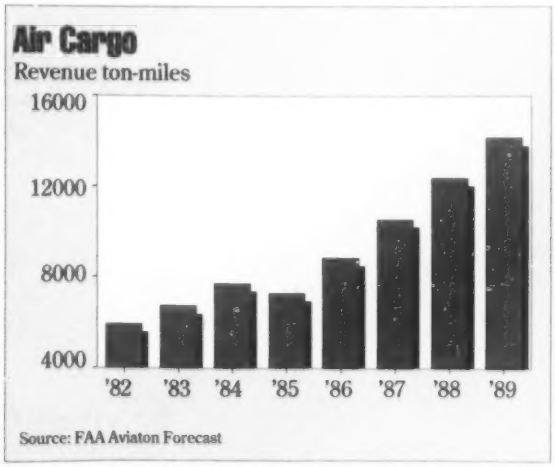
Demand: Not only is the express mail market saturated, the facsimile revolution has drastically cut the need for overnight document transport. Operators are now turning toward box (goods) shipping in hopes of exploiting a new market niche.

This new emphasis on the heavy shipment market is being accompanied by a guarantee of timely delivery. Carriers are pushing the idea that they can become an integral part of the just-in-time manufacturing system because of their ability to transport parts and materials on time, as needed.

Supply: While rates of growth have been phenomenal in terms of volume, major carriers have not enjoyed revenue increases of the same magnitude. The air cargo industry has been extremely competitive, with price cutting the norm throughout much of the 1980s.

This highly competitive environment forced a number of carriers to at best, redefine their market, or in worse cases, merge. In air express, only three major players remain as the decade of the '90s unfolds: Federal Express with roughly 45% of the market, United Parcel Service (UPS) with 26%, and Airborne, which accounts for another 10%.

Outlook: Price hikes during the past two years, as well as the 5%-plus hikes expected this year, suggest the pricing wars which were so much a part of the past decade, are now just a memory.



Polycarbonate demand ascending

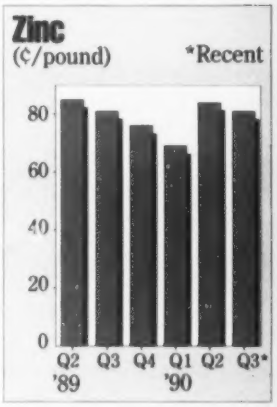
The Freedonia Group estimates that polycarbonate resins will occupy the leading position within the North American engineering resin industry by 1994. Demand from auto and other transportation sectors will fuel growth of 9% annually over the next 5 years. The Cleveland-based research firms expects the electronic and construction markets to also represent areas of strong consumption.

Plant explosion shocks styrene

Impact from the July 5, Arco Chemical (Channelview, TX) plant explosion is still working its way through the petrochemical market. The outage of styrene rocketed prices upward. Styrene spot prices rose 15¢/lb after the blast, topping the 60¢/lb barrier. Although some easing has occurred, styrene prices are still at 53¢/lb.

Zinc prices heading south

Since February, zinc prices have been climbing, but according to Rudolf Wolff & Co. Ltd., London, the market has reached a turning point. Low producer and terminal stocks will prevent a quick reduction, but the latest rally has fizzled and forces exist which suggest a period of weakening prices. Working to drag prices down: no re-



bound in U.S. consumption is expected this year; demand in other parts of the world, most notably Brazil, is also beginning to fall; early-year supply disruptions are abating; and despite these supply problems, production in 1990 is 3.4% above the year-ago pace.

Linerboard export tags to rise

Unexpected strong summer demand has led U.S. linerboard producers to announce a price hike of $30-40/metric ton effective September 1 for export customers. Promoting this recent spurt in foreign demand is the recent weakening of the dollar. Expect the export price hike to stick. The WEFA Group reports that current U.S. linerboard prices in Germany are roughly $80/ton below those of European producers. Domestically, linerboard prices remain about $40/ton below their year-ago level, with discounting from the current $370/ton price still the market norm.

Rail profits squeezed

Overview: With revenues and ton-miles rising slowly, operating profits for Class I railroads are projected by Standard & Poor's to take another hit in 1990, but nowhere near the 6% decline witnessed in 1989. The New York-based research firm notes that while there are still cost-cutting improvements to be made, the industry is finding it harder and harder to boost profits primarily through cost reduction.

Demand: Since profit peaked in 1988, revenues have been growing at less than 1% annually. Despite rail traffic reaching a record level last year and another ton-miles record expected this year, rate hikes have been hard to pass along. Freight rates aren't even mirroring price movements by the economy in general.

Coal, which accounts for roughly 40% of all rail traffic, performed extremely well during the first quarter.

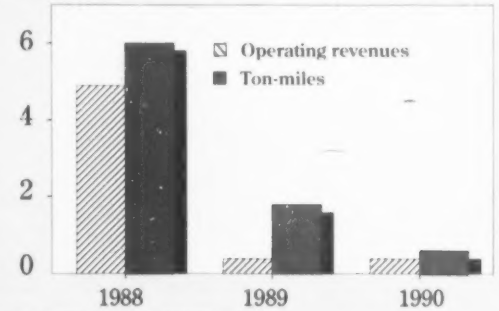
Unfortunately, the slow-growth economy has stagnated carloadings by rail's other major users: metals, chemicals, grain, lumber and autos. Shipments of autos were off nearly 20% after three months, but some improvement is likely during the remainder of the year, assuming no labor disruptions. Rail's heavy investment in new enclosed tri-level auto racks should also start to attract additional business in this sector, but weak final demand tempers any outlook.

Supply: Despite the weakened economic environment, intermodal shipments are vibrant. Spurred by double-stack shipping, container movement (COFC) rose 7.6% during the first quarter.

Outlook: The modest revival in manufacturing has allowed coal and metals shipments to relatively offset the suboptimal performance of grains, lumber and chemicals. With the hard times likely to continue for these three sectors, rail performance becomes greatly dependent on manufacturing, where the future is clouded at best.

Railroads

Year-to-year percent change



Source: Association of American Railroads

Resin tags at crossroads

Despite plastics demand holding up better than expected, prices are mixed, with commodities poised at the crossroads for further divergence. Polyethylene (PE) tabs have already fallen 3¢/lb in the past month. Further decline is likely through year end, since ethylene prices are expected to slide once planned new crackers are brought on. A slide in ethylene prices means cheaper vinyl chloride monomer and styrene too, with easing polyvinyl chloride (PVC) and polystyrene (PS) prices probable later in the year.

Oversupply is starting to erode prices for linear low-/high-density PE (LLDPE/HDPE), overturning increases witnessed during the second quarter. Producer discounting is prevalent in both the HDPE and LLDPE markets. Market share has become a major concern with 2 billion lbs/year new capacity scheduled to come on-stream by year end.

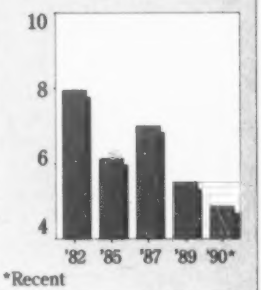
Polypropylene (PP) could take the high road. So far this year PP has held steady, but firm demand and little new capacity coming online this year suggest a possible price rise before 1990 ends.

Silver producers upset

Since 1987, silver prices have maintained a downward trend. August prices are roughly $3/troy ounce below their three-year-ago level. Given the market's already fragile foundation because of plentiful supply, producers are protesting the efforts of the U.S. Treasury and the National Defense Strategic Stockpile to reduce reserves. But analysts at Samuel Montagu & Co. Ltd., London, feel that bargain buying and industrial stockpiling will keep near-term prices from drifting below $4.80/troy ounce.

Silver

($/Troy ounce)



*Recent

Nickel chaotic and higher

Spot nickel prices on the London Metal Exchange (LME) have displayed wide swings since mid-July. The year's highest LME spot price was established on July 16, $4.67/lb. As of early August, prices remained volatile, but above $4.50/lb. Supply pressures, a now-concluded strike and scheduled summer shutdowns, along with unexpectedly heavy buying, combined to inflate prices. No quick turnaround is in sight, as stainless mills in Europe and elsewhere are nearly booked through year end.

Commercial air booming

Overview: Despite the negative aspects associated with the seemingly inevitable cuts in military aerospace spending, which will force major restructuring throughout the entire industry, the commercial aerospace industry is in the midst of its greatest boom ever.

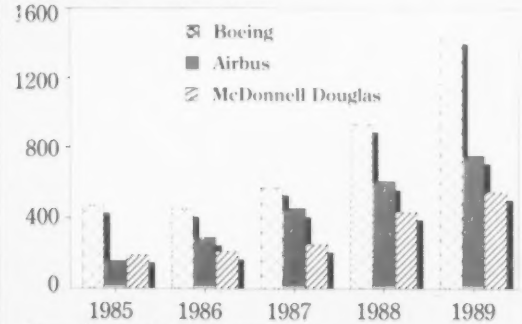
Demand: Three factors are driving the extraordinary surge in new large commercial aircraft orders: estimated growth near 6% for passenger miles over the next 10 years; replacement of aging fleets and noise regulations which will force the retirement of certain older models, despite their airworthiness. Boeing estimates that 70% of new orders will be fueled by the need for additional aircraft to meet worldwide passenger traffic, with replacement of obsoleted aircraft accounting for the remaining 30%.

Supply: Following the last depression, when Lockheed was forced to exit the market, only two U.S. builders of large jet transports remain: Boeing and McDonnell Douglas. U.S. manufacturers continue to lead the world aerospace industry, but Airbus Industrie has emerged as a major contender, with global competition becoming increasingly intense.

Combined orders for the three major manufacturers jumped 42% in 1989. Incredible as it seems, this is down from the 52% increase in orders registered in 1988.

Outlook: The best-case scenario suggests that output from the big three will total 650 deliveries in 1990. Though this 650 represents a jump in output of nearly 30% over last year's total, future production increases will be far less. For example, Boeing's production rate in 1992 is anticipated to be 41 planes per month, up only marginally from the current rate of 34. It seems unlikely, given the magnitude of work done by subcontractors, that production boosts of more than 15% annually can be established.

Commercial air backlog
Number of aircraft on order



Source: Aerospace Industries Association

Industrial diamond demand soars

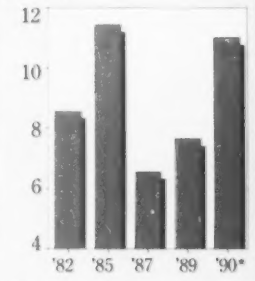
The American Diamond Industry Association (ADIA) reports that the industrial need for caratage is growing extraordinarily. ADIA figures suggest that the Western World alone needs four to five times the level currently available from mining.

A breakthrough by General Electric (GE) Schenectady, NY, may allow some of the industrial market's excess demand to be met. GE scientists claim to have created a better diamond for conducting heat and resisting damage from lasers. The diamonds will be manufactured at GE Superabrasives (Worthington, OH), with the market for the new product possibly reaching $100 million per year.

Supply fears jolt cobalt

Prices have taken a healthy jump after staying within a narrow range for more than three years. Though the official producer price, which is set by African producers and is not due to be changed until later this year, remains at $8.40/lb, the current spot price is trading in a range of $10.50-$11.50/lb. This strong price jump is said to be the result of minor supply glitches, with regular large-volume buyers not affected. But that could change soon; compared to last year, when demand slumped 6.3%, 1990's consumption pace is up. With the five-year demand outlook healthy and potential production problems surfacing in Africa, prices could be quite volatile for the remainder of the year.

Cobalt
($/lb.)



*Recent

Electronic industry to rebound

While 1990 growth is expected to be roughly 2% below the 5% pace observed last year, next year looks quite bright for the industry overall. Henderson Ventures predicts that contraction in the military sector will be more than offset by commercial market performance over the next two years. The Los Altos, CA research firm expects total electronic industry growth of 7% in 1991 and 9% in 1992.

Aluminum ingot exports up

While domestic demand for aluminum ingot fell 10% during the first quarter, the export arena performed incredibly well. Ingot exports are up over 70%, while mill products haven't retreated, up 0.5% over last year's 30% jump.

BUSINESS DATATRAK

by John Sheridan, chief economic editor

N. A. P. M. business barometer

Based on five indicators (employment, inventories, new orders, production, vendor performance)

KEY ECONOMIC TRENDS

Accepting the data reality

Even inhabitants of the monetary ivory tower are worried that turbulence is threatening their soft landing. Grudgingly, Alan Greenspan and the Federal Reserve have admitted that the economy's slow-growth scenario has gotten a little too inert. In an attempt to avert an all-out correction, monetary policymakers have finally eased their grip on money.

While recent data suggests a slight pick-up in manufacturing activity, signs of underlying weakness persist, with our economic foundation seemingly becoming more fragile. Except for those in the services markets, (the one sector pulling the economy forward), the Fed's recent easing of credit is a much-needed relief.

Recession already encompasses nearly half our economy. While there are regional variations which complicate generalities, on the whole, the following sectors are retreating: consumer spending on goods, homebuilding, nonresidential construction, and defense spending. Together, these components account for roughly 45% of inflation-adjusted gross national product.

It doesn't take a rocket scientist to understand why consumers have become more cautious. Slower income growth, accompanied by a tightening job market (see chart) and some major layoff announcements, have promoted an attitude shift by consumers. So too has the announcement from our president of possible new taxes.

The Fed's lowering of interest rates should counter the warning signals which have been working to erode the levels of confidence (see chart) and spending exhibited by consumers. However, a consumer-led recession is no longer out of the question. If spending by consumers continues to deteriorate, trouble could lie ahead.

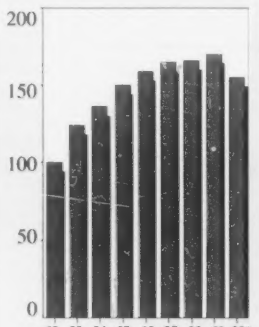
Hopefully, the Fed's monetary policy change will stimulate a revival in construction (see chart), but don't count on it. The housing market is near comatose, with new home sales falling to levels not seen since the last recession in 1982. Construction, however, is not alone in its misery.

Manufacturing profits are also bearing the brunt of the Fed's inflation war. First quarter after-tax profits in manufacturing were down nearly 5% from the fourth quarter of a year ago. The correlation between corporate profits and future unemployment

Leading indicators

Construction contracts

Index 1982=100



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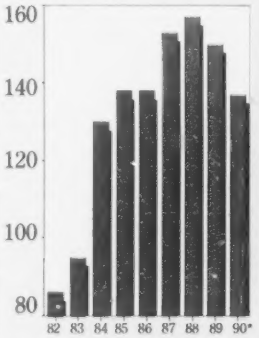
Help wanted

Index 1967=100



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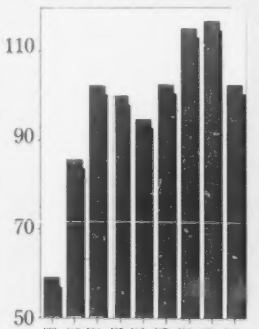
Consumer confidence

Index 1985=100



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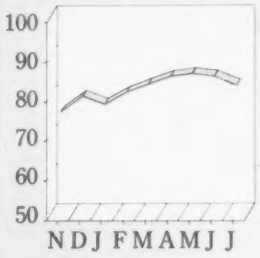
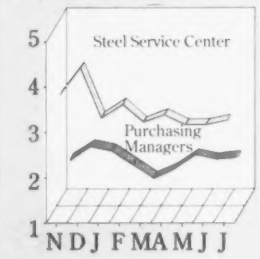
Source: The Conference Board and F.W. Dodge

Steel

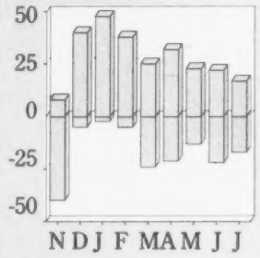
Operating rates



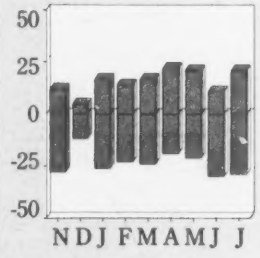
Inventories
(months supply on hand)



Demand (Steel Service Centers)
(Percent of respondents)



Demand (NAP M)



Source: Steel Service Center Institute
NAPM Steel Buyers Committee

is strong. Unemployment has been stabilized by temporary government worker hirings for the census. Moreover, the gradual cutting of manufacturing workers has allowed the unemployment rate to absorb the change. After people collect unemployment for 26 weeks, they no longer count as being unemployed. That's why looking at job growth as measured by the payroll numbers, which has slowed dramatically since last year, is a much better barometer for employment health.

The inflation warlords, however, have finally breached the data warp. They have accepted the data reality that promoting excessive weakness in the goods-producing sector, in order to get inflation down in the service sector, is not the socially optimal thing to do.

METALS SCENE

Steel

Steel service centers continue to exceed their year-ago performance. Through the first six months, the average daily shipping rate (ADSR) is 1.5% ahead of last year's pace.

Despite a drop in the ADSR of stainless (6.8%) and alloy steel (2.3%), June's ADSR topped May's strong showing. Shipments of tubular and structurals, up 5.8% and 4.2% for the month, provided most of the impetus.

Despite the fall in the ADSR of stainless, from 1.33 in May to 1.24 in June, and a similar fall by alloy, from 1.3 in May to 1.27 in June, both products are up significantly from their year-ago levels. Demand from service centers for stainless is up over 10%, while structurals consumption is up over 8%.

Steel Service Center Institute President Andrew G. Sharkey expects activity to remain solid, saying, "We anticipate a relatively stable second half, though economic conditions continue to vary widely both by region and product."

Inland Steel Chairman Frank W. Luerssen commented that "Incoming orders for most steel mill products remain strong, and demand at our service centers is increasing modestly. We expect volumes to remain good through the balance of the year, although price recovery will be slow."

As of July 1, the major mills have been trying to pass along a $15-per-ton price hike, but it is likely to be only partially absorbed, according to the WEFA Group, Philadelphia. WEFA's current forecast does, however, look for the price on volume purchases of cold rolled carbon sheet to be moving higher by mid-third quarter, possibly to $460 per ton.

Import prices
(Compared to domestic)

Steel buyers
ABOVE 50%
SAME 25%
SLIGHTLY BELOW 25%
SUBSTANTIALLY BELOW 0%
SERVICE CENTERS (carbon)
ABOVE 2%
SAME 74%
6-10% BELOW 24%
11-20% BELOW 0%
OVER 20% BELOW 0%

Scrap prices

Ferrous scrap prices displayed a gradual but steady decline once the Fed's soft landing kicked in last year. With economic activity not expected to rebound substantially in 1990, most industry observers predicted further drops in price this year. But, as is so often the case with metals nowadays, supply is the side of the market to keep an eye on.

The upward spike in scrap prices begun last spring has taken many by surprise. The combination of long-run structural changes and short-run disruptions has created a bottleneck on the supply side.

Partial explanations for the supply bottleneck include: steel mills becoming less of a scrap source because of expanded continuous casting and general operational improvements, strong offshore demand, and the fact that higher prices in the past few years have led to a drawdown in inventories. With demand not withering to the degree expected, no countering force to the tight supply conditions is on the horizon.

REGIONAL PERSPECTIVE

X pattern

Alphametrics, an innovative leader in economic analysis and economic software, has constructed a leading-edge index for measuring the current comparative performance of U.S. metropolitan areas.

The Bala Cynwyd, PA, researchers define the United States' current economic environment as a trend phenomenon, not the consequence of rolling recessions, with "the national economy continuing to enjoy moderate growth, but with some industry and region specific softness."

The analysts maintain that this industry and region-specific softness continues to reveal an X pattern. Cities in the Southeast and Far West are generally expanding, cities in the Southwest and New England areas continue to struggle, while performance in the heartland of America, the Midwest, remains mixed.

In the first quarter, only four cities remained in the top ten from 1989. Las Vegas continues to be in a class by itself (see top ten chart), primarily because of its heavy concentration of services employment. Also continuing fine 1989 performances were Sacramento, Seattle, and San Diego.

Cities that aren't very diversified and which depend heavily on manufacturing performed quite poorly during the first quarter, as the list of the bottom ten indicates. Since its peak in the spring of 1989, manufacturing employment has continued to slide, with the correlation between economic health and the service sector likely to persist. To date, any revival in industrial activity has not been significant.

While the Pacific easily keeps its rank as the fastest growing region, a revival by many midwestern and oil patch cities seems to be under way. Manufacturing and defense cuts linger in the New England area, where regional performance is clearly the poorest (see regional chart).

Top 10 Growth Cities

Percent change, 1989:4 to 1990:1

Las Vegas, NV	2.95
Fresno, CA	2.25
Sacramento, CA	1.42
Bakersfield, CA	1.35
Charleston, SC	1.28
Seattle, WA	1.27
Baton Rouge, LA	1.25
Tulsa, OK	1.24
Nashville, TN	1.23
San Diego, CA	1.18

10 Cities of Interest

Percent change, 1989:4 to 1990:1

Atlanta, GA	1.13
Charlotte, NC	0.84
Kansas City, MO	0.67
Norfolk, VA	0.63
Pittsburg, PA	0.57
Minneapolis, MN	0.39
Denver, CO	0.23
Cleveland, OH	0.19
Chicago, IL	0.11
Dallas, TX	-0.09

Bottom 10 Growth Cities

Percent change, 1989:4 to 1990:1

Boston, MA	-0.43
Rochester, NY	-0.43
Allentown, PA	-0.44
Hartford, CT	-0.51
Sprinfield, MA	-0.69
New Haven, CT	-0.74
Worcester, MA	-0.76
Detroit, MI	-0.97
Toledo, OH	-1.62
Youngstown, OH	-2.22

Regional Growth

Percent change, 1989:4 to 1990:1

Pacific	1.07
East South Central	0.64
West South Central	0.63
South Atlantic	0.59
North Atlantic	0.25
North Central	-0.06
New England	-0.40

CURRENT PRICES

Price trends at risk

The uptick in demand which has sent leadtimes and prices higher for certain commodities during the past few months is waning, with domestic factors pointing toward continuing moderation. Unfortunately, new concerns on the international front have increased the risk of an oil shock which is capable of completely negating the Fed's inflation warplan. And, equally as bad, a significant oil shock would certainly put the economy in recession.

Since the first quarter run-up, easing fuel prices have been a driving force in the Producer Price Index's (PPI) downward tilt. Even more impressive is the fact that the PPI, excluding food and energy, has trended downward for more than a year now.

The moderating pace of inflation at the producer level reflects the domestic economy's lackluster condition, especially in the machinery, equipment, auto and construction markets. Worse yet, indicators such as the NAPM Report on Business suggest that the slight revival manufacturing embarked upon during the second quarter has fizzled.

With manufacturing back in the lethargic state which encompassed it for most of the past year, the economy's ability to absorb significantly higher oil prices for an extended period of time seems slim. If prices were to rise $5-$10 dollars a barrel and remain there through a harsh winter, a return in 1991 to the stagflation which marked our last recession is highly probable.

Even weak domestic activity won't constrain prices if oil costs stay high.

This month's breakdown

Index 1982=100

	Latest level	% change from: month ago	year ago
Bearings	131.3	0.6	5.5
Bolts, nuts, etc.	116.4	0.3	4.3
Chemicals, inorganic	111.3	-0.3	3.1
Chemicals, organic	110.3	0.5	-6.2
Concrete products	113.3	0.0	1.9
Corrugated containers	109.0	-0.5	-3.0
Cutting tools, small	113.0	0.0	2.7
Electrical lamps (bulbs)	129.9	0.1	4.3
Electronic components	118.4	0.3	-1.0
Fans and blowers	123.5	0.5	5.0
Foundry and forge products	116.9	0.0	1.6
Fuel oil (residual)	43.1	-13.8	-15.8
Furniture, commercial	133.6	0.2	3.9
Gasoline	72.2	1.0	-3.6
Glass, flat	107.9	-0.3	-1.4
Glass containers	121.1	0.5	4.5
Gypsum products	106.2	-0.8	-3.8
Hand tools	134.4	-0.1	5.4
Hand tools, power driven	121.3	0.4	4.7
Industrial furnaces	127.7	1.0	3.0
Integrating and measuring instruments	126.9	0.5	5.6
Internal combustion engines	119.4	1.4	5.0
Lubricating oil	115.1	0.1	3.3
Lumber millwork	130.6	-0.1	1.8
Material handling equipment	115.1	0.2	2.8
Metal containers	114.3	0.0	2.5
Metal mill shapes	128.7	-1.6	-6.1
Metal tanks	110.1	-3.9	-1.1
Metalworking machines	122.8	0.1	4.0
Motors and generators	133.7	0.1	3.6
Motor trucks	126.6	-0.2	-1.6
Nonferrous metals	132.0	-1.4	-5.8
Office and store equipment	110.1	0.2	2.0
Paperboard	135.4	-0.3	-4.0
Paper boxes and shipping containers	129.7	-0.2	-0.3
Paper office supplies	120.5	-0.2	-1.1
Paint	124.5	0.4	4.4
Plastic resins	123.9	0.2	-10.2
Precision measuring tools	128.8	-0.1	2.8
Pumps and compressors	119.1	0.4	3.2
Refractories	122.7	0.4	2.6
Rubber belts and belting	119.2	0.2	4.7
Scales and balances	109.1	0.1	2.2
Switch gear	123.8	-0.3	3.8
Textiles, synthetic fibers	106.5	-0.2	0.3
Textiles, gray fabrics	117.6	0.3	2.7
Tires and tubes	97.0	0.0	-1.0
Transformers and power regulations	119.8	-1.1	1.3
Welding equipment	127.6	0.0	4.4
Wire and cable	140.9	-1.8	-2.2

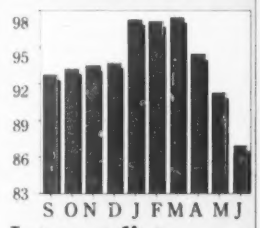
Industrial prices

(Index: 1982=100)

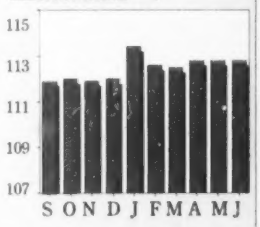
■ 1989 ■ 1990

All industrials

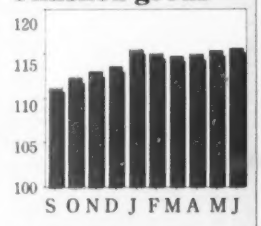
Raw materials



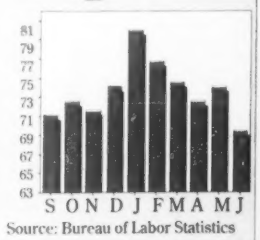
Intermediate materials



Finished goods



Energy



Source: Bureau of Labor Statistics

PROCUREMENT

PMI's drop says "Boom" over

The best of manufacturings' brief revival appears to have passed. According to the latest NAPM Report on Business, the manufacturing sector reached a turning point in July. Following a three-month period when the association's index reported strengthening expansion, July's figure not only dropped, but plummeted into the contraction zone.

With 50 standing as the median between expansion and contraction in the Purchasing Managers' Index (PMI), July's reading of 47.4 isn't taking any changes by riding the fence—the direction, magnitude and implication of the new number are clear. Manufacturing has failed to escape the wrath of the Federal Reserve's soft-landing and is continuing to bear the brunt of the nation's slow-growth environment.

After strong second-quarter increases, new orders dropped dramatically, to their lowest point since January, prompting the PMI's changing status. The drop in new orders accompanied by a sharp decrease in July inventories suggests that purchasers are increasing their efforts to work off existing inventories.

Robert J. Bretz, chairman of the NAPM's Business Survey Committee, commented "The PMI has averaged 48.8% for the first seven months of 1990. If the PMI remains unchanged at the July level for the balance of the year, then past experience indicates this would be consistent with real GNP growth of about 1.3% for 1990."

The buyers surveyed reported copper, zinc, lead, steel, rhodium, caustic soda, sulfur, soda ash, and bearings up in price in July. Down in price were aluminum, magnesium, steel scrap, lumber, linerboard, ethylene, methanol, phenol, plastic resins, DRAMS, fuel oil, natural gas, propane and connectors.

Calculating I/S ratios

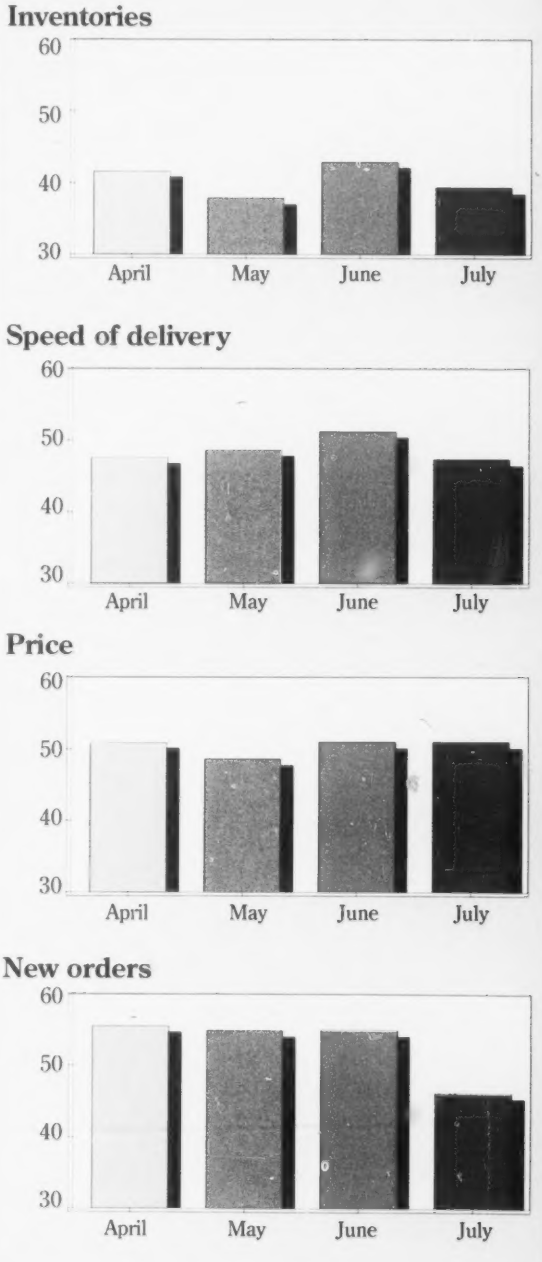
To derive an inventory-to-sales (I/S) ratio, divide the dollar value of inventory by sales, remembering to use data from the same time period. That is, you can divide a particular month's ending inventory by that same month's total sales figure. You cannot, however, use inventory at one point in time and divide it by the year's total sales level. The ratio must relate similar time periods, so if you want to evaluate a year and not just a single month, take the average of the monthly inventory and sales levels, then divide.

In addition, while the manufacturing I/S ratio has fallen from 2 to 1.6 dur-

NAPM procurement trends

(Seasonally adjusted diffusion indexes)

An index where 50 is defined as the neutral level, to the extent a reading is above 50, it represents an expansionary tendency. More particularly, rising inventory prices, and new orders are seen as positive signs of economic growth. A trend towards lower deliveries is similarly interpreted.



ing the current expansion, the new figure does not represent the optimal level for each individual manufacturer. The ratio reflects the industry average, and is not even representative, necessarily, of the industry median. What the 1.6 loosely implies is that if manufacturing inventories remained fixed, the "sector" could meet sales for a little more than a month and a half.

In terms of the optimal ratio, I think that depends on a number of factors, including: product, distribution methods, supplier leadtimes, your inventory monitoring system, seasonal safety stock requirements, and the rate at which inventory gets turned over. Nevertheless, an I/S ratio in excess of 2 seems less than optimal. Moreover, cost-benefit analysis suggests that an I/S ratio closer to 1.5, for manufacturing operations in general, is best from the individual firm's standpoint.

Latest spot market prices

	Latest price	Previous month	Year ago
FERROUS METALS			
Steel, bars, stainless, 303, cwt	179.00	179.00	179.00
Steel, bars, HR carbon, 1000 series, cwt	19.20	18.70	21.00
Steel, bars, HR carbon alloy, cwt	25.00	24.50	24.50
Steel, bars, cold-finished carbon, cwt	34.00	32.50	34.50
Steel, plates, carbon, cwt	23.25	23.25	25.20
Steel, plates, strip mill, cwt	23.60	23.60	23.60
Steel, plates, alloy, cwt	34.25	34.05	34.55
Steel, sheets, C.R., class 1, cwt	30.65	30.65	29.65
Steel, sheets, HR, cwt	23.00	23.00	22.25
Steel, sheets, stainless, 304, cwt	124.00	124.00	124.00
Steel, strip, HR carbon, cwt	22.10	22.10	22.10
Steel, strip, CR carbon, cwt	36.18	36.17	38.30
NONFERROUS METALS			
Aluminum, unalloyed ingot, lb.	0.73	0.72	0.82
Aluminum, alloyed ingot, 355, lb.	0.93	0.93	0.95
Aluminum, secondary ingot, 380, 30000 lb. lot	0.78	0.75	0.73
Antimony, lb.	1.25	0.81	0.95
Cadmium, N.Y., dealer, lb.	2.90	3.19	4.60
Copper, electrolytic wire bars, lb.	1.41	1.26	1.18
Copper, cathode, full plate, lb.	1.28	1.19	1.10
Lead, common, N.Y., lb.	0.50	0.48	0.42
Magnesium, pig ingot, (99.8%), lb.	1.63	1.63	1.63
Mercury, 50 fl. lots, N.Y., fl.	265.00	280.00	270.00
Molybdenum, oxide, canned, lb.	3.35	3.35	3.32
Nickel, cathode, dealer, lb.	4.60	3.93	5.85
Platinum, dealer, oz.	475.00	489.00	494.00
Silver, N.Y., troy oz.	4.84	4.92	5.20
Tin, N.Y., dealer, lb.	2.81	2.90	4.36
Zinc, high grade, lb.	0.82	0.87	0.82
Zinc, die casting alloy, No. 3, lb.	0.90	0.95	0.74
PAPER (unit=ton)			
Uncoated book #3 offset	940.00	940.00	1020.00
Watermarked bond	1090.00	1090.00	1095.00
Unbleached kraft paper, grocery bag, 30 lb.	630.00	660.00	680.00
Bleached kraft, grocery bag, 30 lb.	800.00	800.00	810.00
Kraft linerboard, 42 lb., domestic, East	370.00	370.00	380.00
Newsprint, 30 lb., East	565.00	535.00	573.00
TEXTILES			
Acrylic, open-end spun, 1/18, lb.	1.52	1.52	1.46
Carded cotton, ring-spun, 18/1, lb.	1.40	1.40	1.36
Carded cotton, open-end spun, 18/1, lb.	1.42	1.42	1.36
Combed cotton, ring-spun, 18/1, lb.	1.83	1.83	1.90
Nylon, textured, 70/20, lb.	2.70	2.68	2.45
Polyester, 50/50% carded cotton, 30/1, lb.	1.85	1.85	1.70
Polyester, ring-spun, 100%, 18/1, lb.	1.64	1.64	1.58
Rayon, high-wet modulus, lb	1.36	1.36	1.34
CHEMICALS			
Acrylonitrile, tanks, lb.	0.35	0.35	0.40
Ammonia, anhydrous, tankcars, Gulf Coast, ton	77.00	77.00	123.00
Benzene, petroleum, tanks, Houston, gal.	1.30	1.30	1.50
Caustic soda, metric ton	350.00	340.00	320.00
Cresylic acid (over 25%), tanks, lb.	0.55	0.55	0.55
Formaldehyde, USP, 37%, (12%-15% meth.), tanks, lb.	0.13	0.13	0.11
Glycerine, synthetic, 96%, tanks, lb.	0.74	0.74	0.79
Methanol, syn., tanks, 4000 gals., f.o.b. Gulf Coast plants	0.40	0.40	0.52
Naphthalene, crude, tanks, lb.	0.17	0.17	0.16
Phthalic anhydride, molten, tanks, lb.	0.33	0.33	0.41
Polyethylene resin, low density, liner film grade (market place), lb.	0.52	0.52	0.49
Polypropylene, homopolymer grade (market price), lb.	0.50	0.50	0.46
Polystyrene, general purpose grade (market price), lb.	0.50	0.50	0.59
Polyvinyl cholride, pipe grade, (market price), lb.	0.40	0.40	0.44
Soda ash, light 58%, 100 lb., paper bags	150.00	150.00	135.00
Styrene monomer, 99.6%, tanks, lb.	0.40	0.40	0.49
Sulfur, crude, ex-terminal, Tampa, FL, lt.	128.00	128.00	142.00
Sulfuric acid, 66%, commercial, tanks, ton	69.75	69.75	66.86
Titanium dioxide, anatase, reg., carlots lb.	1.04	1.04	0.95
Xylene, Gulf Coast, spot, barge, gal.	1.03	1.03	0.95
BUILDING MATERIALS			
Lumber, 2x4 fir, mbf, cl	341.56	341.56	326.95
Lumber 2x4 pine, mbf, cl	341.28	340.11	321.47
Plywood, plyform, 3/4", msf, cl	663.11	662.78	570.00
Plywood, 5/8", msf, cl	388.38	387.51	370.22
Cement, type 1, bulk, ton	63.47	62.72	63.88
Sand, concrete, ton, cl	7.43	6.91	7.17
Ready-mix concrete, 3000 psi/cu. yd.	49.59	48.95	48.81
Crushed stone, base course, ton, cl	6.30	6.30	5.84
Concrete blocks, sand/gravel, 8"x8"x16", per hundred	84.64	84.28	87.17
Reinforcing bars, grade 60; per cwt.	22.04	22.09	21.32
Asphalt paving AC-20	108.38	108.01	108.53
Concrete sewer pipe, 24", prem. joint,, per ft., cl	18.14	18.14	17.90
FUELS			
Crude oil (W. Tx. Int. Cush), bbl.	20.20	17.00	20.40
Diesel (reseller rack, Chi.), gal.	0.56	0.49	0.51
Heating oil No. 2 (N.Y.), gal.	0.58	0.48	0.56
Heating oil No. 2 (Gulf spot), gal.	0.54	0.46	0.48
Fuel oil No. 6 (N.Y.) contract cargo	18.75	17.40	18.75
Gasoline (prem unlded N.Y.), gal.	0.85	0.80	0.78
Gasoline (reg unlded N.Y.), gal.	0.70	0.64	0.59
Kerosine (reseller rack, Chi.), gal.	0.65	0.56	0.60
SCRAP MATERIALS			
Copper, No. 1, brass mill scrap, carload	1.21	1.18	1.03
Copper, No. 1, refineries copper scrap, carload	1.13	1.10	0.98
Copper, No. 2, refineries copper scrap, carload	1.01	1.01	0.89
Copper, No. 1, brass ingot makers', carload	1.09	1.06	0.93
Copper, No. 2, brass ingot makers', carload	0.97	0.97	0.84
Brass, yellow solids, carloads	0.62	0.62	0.57
Aluminum, secondary smelters, old sheet & cast	0.47	0.49	0.43
Aluminum, secondary smelters, mixed clips	0.53	0.55	0.50
Zinc, old, smelters scrap	0.30	0.30	0.35
Zinc, die cast slab, smelters scrap	0.36	0.36	0.37
Steel, no.1, hvy., dlvd., Pitts., ton	118.00	102.00	99.00
Steel, no.1, hvy., dlvd., Chi., ton	116.00	107.00	108.00

Sources: Metals Week, American Metal Market, Engineering News-Record(20-city averages), America's Textiles International, Journal of Commerce, Chemical Marketing Reporter, Pulp and Paper Week.

* This page has been revised to better serve you.